

IMPROVING LOCAL AND STATE AGENCY RESPONSE TO TERRORIST INCIDENTS INVOLVING BIOLOGICAL WEAPONS



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Disclaimer

The contents in this planning guide are not to be construed as an official Department of the Army position unless so designated by other authorizing documents.

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INTRODUCTION

Introduction

American citizens now realize that terrorism is a real threat to our nation at home. Because of multiple terrorist acts such as the September 11, 2001 attacks on the Pentagon and the World Trade Center, as well as anthrax-contaminated mail and the Oklahoma City bombing, there is a need to plan for the response to domestic terrorism. Terrorist activities are no longer limited to the detonation of conventional bombs, as was dramatically seen with the postal mailings of letters containing *B. anthracis* spores subsequent to September 11th. Biological terrorism has become a growing concern since the Gulf War and the anthrax-laced letters.

Homeland security concern prompted the 104th Congress to pass Public Law 104-201, Title XIV – The Defense Against Weapons of Mass Destruction Act of 1996 (also known as the Nunn-Lugar-Domenici Domestic Preparedness Act), which, among other mandates, required that the Secretary of Defense develop and carry out a program to improve the responses of federal, state, and local agencies to emergencies involving biological and chemical weapons. As a result, the Department of Defense (DoD) developed the Biological Weapons Improved Response Program (BW IRP), inviting the Department of Health and Human Services (DHHS), Department of Energy (DOE), Department of Agriculture (USDA), the Federal Emergency Management Agency (FEMA), the Federal Bureau of Investigation (FBI), and the Environmental Protection Agency (EPA), as well as emergency responders and managers from multiple states and local

communities to participate in the planning process. This program transitioned to the Department of Justice (DOJ), on October 1, 2000, and is ongoing.

A biological terrorist attack could quickly overwhelm community and state emergency resources. State and/or local offices of emergency management, public health departments, and other departments can help organize a response. This planning guide is a first step in helping your community evaluate current Emergency Operations Plans (EOPs), appendices, and Standard Operating Procedures (SOPs). Using the principles from this guide, your community can begin to incorporate additional planning actions that will allow for an effective response to a terrorist incident involving biological weapons.

Biological Weapons Improved Response Program (BW IRP)

The BW IRP's purpose is to identify, evaluate, and demonstrate the best practical approaches to improve response to terrorist incidents involving biological weapons (BW). The approaches developed by the BW IRP are to be used by communities as a starting point to design and develop their own biological weapons response plan.

The BW IRP, led by the U.S. Army's Soldier and Biological Chemical Command (SBCCOM), is a multi-year, multi-agency effort that was started in April 1998. The initial program team was composed of over 60 federal and state experts, local responders, and technical experts. The team completed an assessment of the BW response problem and formulated an

integrated approach to BW emergency response. This approach is summarized in the BW Response Template.

Biological Weapons Response Template

The BW Response Template embodies the concepts and specific activities to be considered in designing, evaluating, or refining BW response programs, and can be used as a starting point for communities

to formulate their own unique plans, protocols, and preparations for responding to a BW incident or a major natural disease outbreak.

The template is organized into major types of response activities, referred to as components, that collectively represent an integrated response system. The components of the generic template are categorized into operational decisions

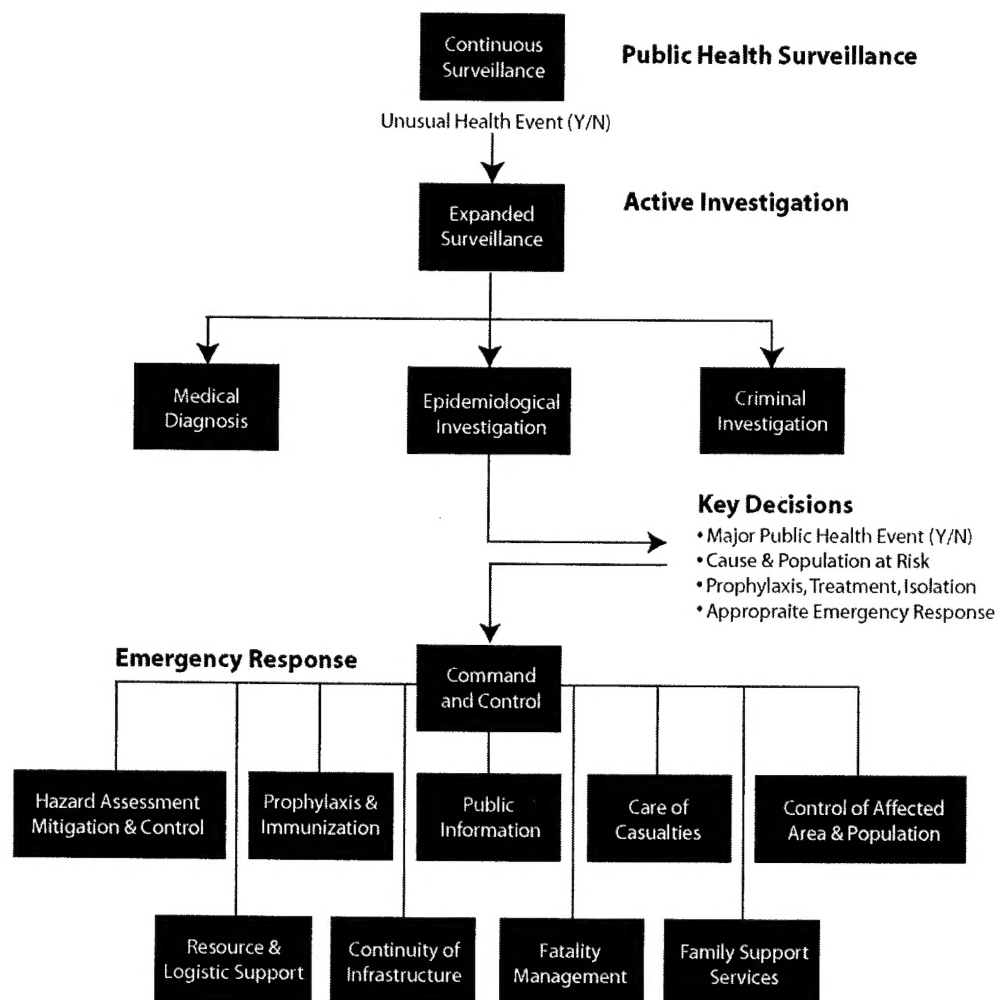


Figure 1. BW Response Template

addressing three phases of response:

1. Continuous surveillance
2. Active investigation
3. Emergency response

Figure 1 is a schematic representation of the BW Response Template Components and Key Decisions.

All 13 components are briefly described in this planning guide.

The BW Response Template addresses both Crisis and Consequence Management. Crisis Management is primarily a law enforcement function that focuses on the measures taken to anticipate, prevent, and/or resolve a terrorism threat or incident. The FBI is the Lead Federal Agency (LFA) for Crisis Management. Consequence Management includes measures to protect public health; search, rescue, and medical treatment of casualties; evacuation of people; protection of first responders; and prevention of the spread of disease. It also focuses on restoring essential government services and providing emergency relief to government, businesses, and individuals affected by the consequences of terrorism. FEMA is the LFA for Consequence Management.

In order to respond effectively to a covert bioterrorist attack, local medical and public health personnel need the tools and training to quickly recognize unusual medical symptoms or patterns in the local

population. Patterns may include slight changes in normally reported illnesses, many of which mimic influenza symptoms early in the course of the disease. Response planning should include measures to facilitate detection and identification of potential BW disease outbreaks at the earliest moment and should include plans and procedures for the expeditious administration of appropriate medical prophylaxis to avoid disease in exposed victims. Response planning should also address the supportive and non-chaotic management of a significant number of casualties and fatalities. Lastly, response planning should facilitate and coordinate the mobilization of the myriad of resources necessary to help deal with a major BW attack.¹

Characteristics of Bioterrorism

A large, covert BW terrorist event would represent a public health catastrophe, possibly involving tens of thousands of victims and rapidly overwhelming local resources. Local communities are the first line of responders to this type of attack and must lead the BW response. Although key local agencies such as the law enforcement and fire departments would have significant roles, the public health and medical personnel would be the true "first responders" to this type of event and would be most heavily tasked in a response. While local and state emergency response plans would be implemented initially, resources available through the response plans would

¹The BW Response Template is presented here in brief but is available in detail in the 1998 Summary Report on BW Response Template and Response Improvements, Volumes 1 & 2. This summary report is available to state and local government agencies through the Department of Justice Office for Domestic Preparedness (ODP) Help line (see the last section in this guide titled "Points of Contact for Planning Assistance"). It contains not only the details of the Response Template, but also the proposed timelines and projected personnel and material resources needed for each response activity. The summary report also includes the five different attack scenarios the team analyzed. The scenarios, created by BW experts to be technically credible, were selected in order to develop practical approaches to improve BW domestic preparedness. They cover a range of possible agents, attack targets, and casualty numbers.

be quickly exhausted. Local communities should therefore plan to rely on their own resources for the first few days until significant mutual aid and state and federal assistance arrives. Resources from these agencies could include the following:

1. Medical staff
2. Equipment
3. Pharmaceuticals
4. Logistics
5. Other support as needed²

A large BW attack may extend beyond the boundaries of a single community and into surrounding communities and states. Many people who come into a community for

work or for other purposes may become ill and then return to their homes, which are located outside the target community. Airports located in the affected community could also facilitate the spread of disease to other parts of the United States and the world. Due to the covert nature of biological organisms, a biological attack will produce widespread fear; this fear will present unique challenges to responders, government officials, and the public.

This guide is intended to present a practical approach for states and cities to use in planning for bioterrorism

² For information on how the federal government implements the Robert T. Stafford Disaster Relief and Emergency Assistance Act to assist state and local governments when a major disaster or emergency overwhelms their capabilities to respond, state and local emergency response officials should review the Federal Response Plan which is available through FEMA's Web site at <http://www.fema.gov/r-nr/irp/>. In the case of bioterrorism, the Terrorism Support Annex and the Emergency Support Function #8 - Health and Medical Services Annex are of prime importance. Please note that requests for federal assistance under the Federal Response Plan are made by the state. In addition, some Federal agencies have planning guides or other published resources available to assist communities in pre-planning activities. For example, the U.S. Department of Health and Human Services released a document in July 2001 titled, The Public Health Response to Biological Guidance for State Public Health Officials. This planning guidance report is designed to help state public health officials determine their roles in biological and chemical terrorism response as well as to improve the coordination activities among responding agencies.

THE 13 COMPONENTS OF THE BW RESPONSE TEMPLATE

This document presents 13 major response functions that states and local communities should consider for inclusion in their Emergency Operation Plans. The Incident Command System (ICS) should still be followed; these 13 components are not intended to replace the ICS but are intended to only present critical functions of a BW response.

7 MEDICAL SURVEILLANCE

Medical surveillance should operate continuously to improve the chances of early detection of unusual medical events. This initial, non-specific detection of activity above an established baseline should trigger appropriate actions for a timely response. For example, communities should pay particular attention to disease outbreaks or events that are not endemic to their geographic area or to common outbreaks that occur in uncommon seasons.

Several local communities are now monitoring hospital admissions, 911 calls, and unexplained deaths as indicators of an unusual medical event. Other indicators that a community might want to monitor include sales of over-the-counter cough and cold remedies, increased veterinary activity, and environmental factors such as fish kills, bird deaths, or insect deaths.

When baselines are exceeded, community health officials should quickly decide if an unusual event has occurred. If so, they then would initiate the four active investigation components of the response template, which are expanded surveillance, medical diagnosis, epidemiological investigation, and criminal investigation (see Figure 1). Medical surveillance can also be

expanded to actively poll emergency departments, primary care clinics and providers, infectious disease specialists, medical examiners, veterinarians, other infection-control practitioners, and pharmacies to ascertain the context and possible cause of the anomaly. The decision to initiate active investigation should have a low threshold, as these activities have only a modest cost and impact on the community, and timely decisions will avoid delays that would reduce the effectiveness of emergency response in saving lives and reducing suffering in actual events.

Public health agencies should also be prepared for special features a terrorist attack might have. These features may include the following:

- Combination of Agents
- Attacks on multiple locations either simultaneously or consecutively
- Use of new or re-engineered strains of agents
- Use of agents that are not usually considered biological threats

Medical staff should be trained to recognize unusual clusters of disease symptoms that may be indicative of bioterrorist activity. An often overlooked but key activity that should be included is developing procedures to coordinate public health and veterinary surveillance (as well as epidemiological investigations). This coordination will enhance the ability of communities to recognize an outbreak and determine if it is natural or man-made.

If a potential BW health problem is suspected or confirmed, the public health community should notify the senior local elected official, emergency managers, and

local and federal law enforcement officials. Each community should establish triggers that, when exceeded, would cause the health department to notify these people. Public health officials should gather and share pertinent information such as suspected location of incident, current casualty count, and approximate date and time of exposure.

7 MEDICAL SURVEILLANCE

Response Activities:

- Continuously monitor key indicators.
 - Hospital admissions
 - 911 calls
 - Sales of over-the-counter cough, cold, and flu remedies
 - Veterinary activities
 - Unexplained deaths
 - Unusual events
- Expand surveillance when key indicators exceed thresholds.
 - Poll emergency departments
 - Poll primary care providers, infectious disease doctors, and infectious control practitioners
 - Poll veterinary clinics
 - Poll pharmacies
 - Track non-traumatic EMS requests

7 MEDICAL SURVEILLANCE

Suggested Local and State Planning Actions and Items for Inclusion in Emergency Operation Plans (EOPs), Appendices and Standards Operating Procedures (SOPs):

- Identify department responsible for medical surveillance and reporting.
- Develop surveillance plan for detecting unusual medical events.
- Involve the veterinary profession in surveillance activities.
- Establish key indicators and medical surveillance baselines for each.
- Enhance epidemiological capability to detect and respond.
- Enhance biological terrorism training for health care professionals.
- Install an information system for patient monitoring, management, and tracking.
- Ensure that procedures are in place for rapid communication between public health officials, emergency rooms, law enforcement, and emergency management officials about unusual biological events.
- Establish 24/7 hotlines for reporting public health incidents

2 MEDICAL DIAGNOSIS

If medical surveillance indicates that an unusual event may be occurring, local officials should have established procedures for confirmation and definitive diagnosis. A process for rapid preliminary identification of suspected biological samples should be established locally, and samples should be sent according to protocols for verification to state, regional, or federal laboratories within the Centers for Disease Control and Prevention (CDC)-supported Laboratory Response Network

(LRN). Veterinary diagnosis should also be considered if there are clinical samples from affected animals. If initial local and state diagnoses indicate a potential BW agent, validation should be made by the CDC or the U.S. Army Medical Institute of Infectious Diseases (USAMRIID). If a potential BW health problem is strongly suspected or confirmed, the public health community should notify the senior local elected official, emergency managers, local law enforcement officials, and the local FBI office. Each community should establish triggers that, when exceeded, would cause the health department to notify the senior elected officials. Likewise, any selected infectious disease laboratory results that are reported to the public health department also should be reported to the senior local elected official, emergency manager, the FBI, and the local law enforcement officials.

2 MEDICAL DIAGNOSIS

Suggested Local Planning Actions and Items for Inclusion in EOPs and SOPs:

- Identify department responsible for contacting and coordinating sample submission according to predetermined policies and procedures.
- Enhance information management capabilities between local health departments, laboratories, and emergency departments and urgent care centers to improve timeliness of diagnosis on a 24/7 basis.
- Enhance local laboratory capabilities to make presumptive diagnosis and ensure timely logistics support to these labs.
- Develop procedures for mutual support and information sharing between public health departments and local law enforcement facilities.

2 MEDICAL DIAGNOSIS

Response Activities:

- Undertake local clinical lab tests.
- Obtain presumptive diagnosis of illness.
- Coordinate with lab, CDC and/or USAMRIID prior to shipping any samples.
- Confirm diagnosis and identify agent at State lab, CDC and/or USAMRIID.
- Obtain veterinary diagnosis (as applicable).

3 EPIDEMIOLOGICAL INVESTIGATION

An epidemiological investigation can determine the distribution of cases and sources of a disease outbreak. The public health department will conduct its epidemiological investigation to identify and control the disease outbreak. Such an investigation provides an analysis of the collected data and supports the development of recommendations for containment, prevention, and treatment.

The law enforcement and public health communities typically conduct their investigations separately. As a result, information that may benefit one or both investigations is not obtained or exchanged.

3 EPIDEMIOLOGICAL INVESTIGATION

Suggested Local Planning Actions and Items for Inclusion in EOPs and SOPs:

- Identify agency responsible for epidemiological investigation.
- Determine method and routing of report.
- Identify process and procedure for reporting suspicious disease patterns or BW health problems to law enforcement officials and State Health Departments.

Response Activities:

- Case definition (detailed description of disease and pattern).
- Track distribution of cases, persons, place and time.

- Chart spatial and temporal course of the outbreak.
- Define population at risk and map initial victim locations.
- Identify source, mode of transmission and cause.
- Analyze risk factors (commonality).
- Ensure that clinicians know the standardized information to be gathered.
- Analyze clinical and patient information, diagnosis and prognosis.
- Conduct interviews.
- Analyze clinical and environmental lab results.
- Make recommendations and provide decision support of containment, prevention and treatment measures.
- Develop hypotheses regarding method and execution of BW attack.
- Communicate results.
- Conduct threat assessment and share information with other components.
- Work closely with criminal investigation team.
- Consider conducting a joint epidemiological and criminal investigation.
- Local communities provide feedback to the state health department.

Once an epidemiological investigation is initiated, law enforcement officials should be notified and provided with any data that has been collected. When epidemiologists identify the location of the disease source, criminal investigators should visit the site to collect evidence.

The key to successful epidemiological and criminal investigations of a potential BW event is a good working relationship among law enforcement, epidemiologists, and the public health department. Having procedures in place to facilitate sharing of information among these agencies is highly recommended. Consideration should be given to the development of a common data collection form to be used by both law enforcement and epidemiology personnel. This form should allow the sharing of necessary information while protecting the confidentiality of victims. For more information on epidemiological and criminal investigations, see the NDPO/DoD Criminal and Epidemiological Investigation Report.³

4 CRIMINAL INVESTIGATION

The law enforcement community will conduct its investigation with the intent of identifying, apprehending, and prosecuting the perpetrator(s) and preventing further attacks. The criminal investigation is a joint effort involving many agencies and must complement the epidemiological investigation. The criminal investigation will include conducting interviews of hospitalized patients, their relatives, friends, coworkers, and others in the affected population groups. To facilitate

these interviews, a checklist of basic questions to ask should be developed. The interviews can help determine the cause, perpetrators, and other details of the attack.

Other types of evidence that supplement interviews include biological and environmental samples. Sampling must be performed according to accepted national standards. Samples must be properly packaged, documented, and transmitted to appropriate labs. Chains of custody must be maintained. If the criminal investigators detect a potential public health problem, the sharing of the information described above between the health/medical community and law enforcement officials will help in both investigations. Communities should develop mechanisms to share pertinent information with each other, paying particular attention to patient confidentiality and operational security issues. For a credible threat, law enforcement should notify predetermined public health officials. Likewise, if public health officials identify an unusual or suspicious disease outbreak, they should notify the appropriate law enforcement organization. Although several days may have passed from the time of the release until a BW attack is suspected, law enforcement officials must take the appropriate precautions, remembering the perpetrators still may be present, either at the scene or at nearby treatment centers. Safety concerns such as agent hazards, secondary devices, and/or booby traps left at the scene should be considered when planning response procedures for the criminal investigation team.

³ U.S. Army Soldier and Biological Chemical Command, NDPO/DoD Criminal and Epidemiological Investigation Report, Aberdeen Proving Ground, Maryland, December 2000.

Sharing of Information

A challenge facing the epidemiology and law enforcement investigations is determining what information to share. An early exchange of information may prevent the escape of a criminal or the additional spread of an infectious agent, thus achieving the goals of each group. Despite this fact, a greater exchange of information seems likely only after a diagnosis or a criminal act is confirmed. Law enforcement is concerned that the disclosure of information might reveal sources and methods, thus exposing confidential sources to bodily harm. Similarly, the medical/public health community is concerned that law enforcement having access to individual medical records would jeopardize the reporting and sharing of confidential data between patients and physicians. However, withholding this information will significantly impact the public health community's ability to detect, respond, and control all diseases.

Criminal investigators will collect information from a variety of sources. Any information available from the medical/public health community could potentially be critical to the investigation. Conversely, the epidemiological investigation relies upon the accumulation and aggregate analysis of large quantities of data. No single data point is used to arrive at a definitive conclusion. Outbreak control depends upon the analysis of data derived from clinical evaluation and laboratory studies, contact studies with correlated clinical and/or laboratory studies and statistical analysis, and interventions designed to limit further exposure. These elements of outbreak control reduce the likelihood of illness from exposure and/or facilitate early treatment of the disease. Trained medical/public

health personnel must obtain the detailed data required by that community. However, the law enforcement community can help the medical/public health community focus its investigation with the information identified below.

Table 1 lists information that should be obtained during a criminal investigation to aid the epidemiological investigation. The following paragraphs describe the general relevance of the questions contained in Table 1.

- 1. Personal/Family Health Information.** Information in this section may help the medical/public health community gain an initial impression about the extent of the outbreak.
- 2. Activities Information.** These questions are designed to identify the potential point of origin for the infectious agent. Identifying victim or witness activities also provides information about the potential spread and dispersion of the infectious agent and the potential for secondary spread if the agent is communicable. Matching victim location during the times of most probable exposure, and then comparing victim movements for intersecting or proximal passage may more firmly establish time and location of the release.
- 3. Agent Dissemination Information.** Information that assists investigators in determining whether illnesses are a product of a naturally occurring outbreak, or if they are the result of an intentional release. Identification of dissemination devices, affected animals, or unusual tastes and odors

**Table 1: Medical/Public Health-Related Questions
for Law Enforcement Personnel to Ask**

A. Questions the law enforcement investigator would ask potential victims and witnesses:

1. Personal/Family Health Information

- What do you think made you ill?
- When (date/time of onset) did you start feeling sick?
- Do you know of anyone else who has become ill or died (e.g. family, coworkers, etc.)?
- Have you had any medical treatment in the last month? What is the name of the health-care provider? Where were you treated?

2. Activities Information

- Where do you live and work/go to school?
- Did you attend a public event (i.e. sporting event, social function, visit a restaurant, etc.)?
- Have you or your family members traveled more than 50 miles from home in the last 30 days?
- Have you recently traveled to another country? Where? When?

3. Agent Dissimination Information

- Did you see an unusual device or anyone spraying something?
- Have you detected any unusual odors?
- Have you noticed any sick or dead animals?
- Have you noticed any potential dispersal devices/laboratory equipment/suspicious activities?
- Did you receive any suspicious mail or packages?
- Have you detected any unusual powders or substances?
- Have you suffered recent insect bites or exposures?
- Have you encountered, or do you work with animals or hides?

B. Questions the law enforcement investigator would ask medical/public health personnel:

1. Medical Information

- Is the victim's disease communicable?
- When did the victim first seek treatment for the illness?
- What are the laboratory results?
- Who collected, tested, analyzed and had access to the samples?

2. Personnel Safety Information

- What precautions should criminal investigators take?
- What physical protection from the disease/agent is needed?
- Is the agent communicable by person-to-person exposure? How is the disease spread?

3. Epidemiological Investigation Information

- Who is the point of contact in the medical/public health community?
- Where should the sick be referred?
- What makes this case suspect?
- What is the spectrum of illness the law enforcement community could be seeing?

may aid in the identification of the agent.

4. Personnel Safety Information.

This information helps ensure that criminal investigators take the necessary precautions to protect themselves while conducting their investigation.

5. Epidemiological Investigation Information.

These questions are designed to ensure that the law enforcement community is providing the epidemiological investigation information to the appropriate people and that the law enforcement officers understand the basic nature of the disease that they are investigating.

Table 2 lists information that the medical/public health community could obtain during its epidemiological investigation to help with the criminal investigation. The following paragraphs generally describe the pertinence of the questions contained in Table 2.

- 1. Personal Information.** The victim and witness information obtained from these questions helps the law enforcement community identify a possible target community for the attack. This information can uncover common links among victims and help law enforcement officials determine if there are significant patterns or other commonalities. This information can then be used to identify possible suspects. Personal property may contain critical information leading to personal contacts that may not be readily discovered.

- 2. Travel Information.** These questions provide information about the spread of the agent and the potential point of release.

- 3. Medical Information.** This information may provide common links concerning how, when, or why the attack occurred.

- 4. Safety Information.** Care must be taken to prevent additional exposure of investigators to possible hazards. Appropriate personal protective equipment, typically a HEPA mask and gloves, should be available to them.

If the law enforcement community has information that indicates someone may release a particular biological agent, the medical/public health community can identify specific symptoms and medical countermeasures appropriate to a particular agent. Since the perpetrators may become victims, intelligence data may help to protect medical/public health personnel and provide an early alert to the law enforcement community if the medical community sees individuals with the targeted symptoms.

5. Criminal Investigation Information.

These questions help ensure that the medical/public health community obtains the appropriate information for the law enforcement community. More importantly, the law enforcement community needs to ensure that the medical/public health community maintains a legal chain of custody when handling evidentiary items.

Table 3 & 4 identify triggers for initiating communication between law enforcement and public health.

Table 2: Law Enforcement-Related Questions for Medical/Public Health Personnel to Ask

A. Questions the medical/public health investigator would ask potential victims and witnesses:

1. Personal Information

- What is the victim's name?
- What is the victim's age/date of birth?
- What is the victim's sex?
- What is the victim's address?
- What is the victim's social security number?
- What is the victim's driver's license number?
- What is the victim's occupation/employer?
- What is the victim's religious affiliation?
- What is the victim's level of education?
- What is the victim's ethnicity/nationality?
- Record any personal property (bag & tag).
- Are there any common denominators among victims/patients (i.e. race, socio-economic status, socio-political groups & associations, locations, events, travel, religion, etc.)?

2. Personal/Family Health Information

- What do you think made you ill?
- When (date/time of onset) did you start feeling sick?
- Do you know of anyone else who has become ill or died (e.g. family, coworkers, etc.)?
- Have you had any medical treatment in the last month? What is the name of the health care provider? Where were you treated?

3. Activities Information

- Where do you live and work/go to school?
- Did you attend a public event (i.e. sporting event, social function, visit a restaurant, etc.)?
- Have you or your family members traveled more than 50 miles from home in the last 30 days?
- Have you or your family members had any contact with individuals who had been in another country in the last 30 days?
- Have you recently traveled to another country? Where? When?

4. Agent Dissimination Information

- Did you see an unusual device or anyone spraying something?
- Have you detected any unusual odors or tastes?
- Have you noticed any sick or dead animals?
- Have you noticed any potential dispersal devices/laboratory equipment/suspicious activities?
- Did you receive any suspicious mail or packages?
- Have you detected any unusual powders or substances?

Table 2 continued...

- Have you suffered recent insect bites or exposures?
- Have you encountered, or do you work with animals or hides?

5. Travel Information

- Has the victim traveled outside of the United States in the last 30 days?
- Has the victim traveled away from home in the last 30 days?
- What is the victim's normal mode of transportation and route to and from work everyday?
- What have been the victim's activities for the last 30 days?

B. Questions the medical/public health investigator would ask law enforcement personnel:

1. Incident Information

- Has the Interviewer heard any unusual statements (i.e. threatening statements, biological agents)?
- What is the agent? Is the agent's identity suspected, presumed, or confirmed?
- What is the victim's account of what happened or how he/she might have gotten sick?
- What is the time/date of exposure? Is the time/date suspected, presumed, or confirmed?
- What, if any, is the cluster of casualties? Is the cluster suspected, presumed, or confirmed?
- What are the potential methods of exposure (e.g. ingested, inhaled, skin contact)?
- Where is the exact location of the incident? Is this location suspected, presumed, or confirmed?
- What is the case distribution? What are the names, dates of birth, and addresses of the cases?
- What physical evidence should we seek?
- Did anyone witness a suspicious incident? What are their names, dates of birth, and addresses?

2. Safety Information

- What makes this case suspect?
- Is there any information that would indicate a suspicious event?
- Are there safety or security issues for the medical/public health personnel?

3. Criminal Investigation Information

- Who is the point of contact in the law enforcement community?
- To whom should we refer any potential witnesses?
- What makes this case suspect?

Table 3: Law Enforcement Triggers

- Any intelligence indicating that disease agents are or may be intentionally used to harm someone
- Any indication that a criminal/terrorist element is involved with a serious illness or death
- Seizure of any bioprocessing equipment from any individual, group, or organization
- Seizure of any potential aerosol dissemination devices from any individual, group, or organization
- Identification or seizure of literature pertaining to the development or dissemination of biological agents.
- Any assessments that indicate a credible biological threat in an area

Table 4: Medical/Public Health Triggers

- Large numbers of patients with similar symptoms or disease
- Large numbers of unexplained symptoms, diseases, or deaths
- Higher than expected morbidity and mortality associated with a common disease and/or failure to respond to traditional therapy
- Single case of disease caused by an uncommon agent (i.e. smallpox, viral hemorrhagic fever, anthrax)
- Multiple unusual or unexplained disease entities in the same patient
- Disease with an unusual geographic or seasonal distribution - i.e. tularemia in a non-endemic area or influenza in the summer

4 CRIMINAL INVESTIGATION

Suggested Local Planning Actions and Items for Inclusion in EOPs and SOPs:

- Identify key agencies with which law enforcement officials should coordinate unified command activities.
- Develop protocols for the following situations to facilitate response to a BW threat.
 - Credibility threat assessment process (in coordination with FBI)
 - Recognition of warning signs and indicators of BW incidents
 - Detection and handling of secondary devices.
 - Interviewing potentially contaminated or infectious victims
 - Methods for collecting, handling, decontaminating, transporting, preserving and storing biological evidence, including maintaining the chain of custody
- Coordinate criminal investigation with epidemiological investigation.
- Determine how and when results are reported to the Emergency Operations Center (EOC).

4 CRIMINAL INVESTIGATION

Response Activities:

- Activate investigation task force teams (canvass, intelligence, crime analysis).
- Conduct interviews with sick in hospitals, airport employees, fellow sick officers, marine workers, etc.
- Collect evidence.
- Conduct investigation, identify, locate and apprehend suspects.

5 EMERGENCY MANAGEMENT OPERATIONS

When local officials determine that a major health event is occurring, they should activate their emergency operations center (EOC). They should implement an incident/unified command system. A unified medical branch should be established within this command structure, and representatives from surrounding municipalities, state agencies, and federal agencies should be requested. The emergency operations plan (EOP) should be activated. Local officials may declare a state of emergency and request mutual aid from surrounding municipalities, and state and federal governments. The key is planning coordination among all departments and forging relationships among law enforcement, medical practitioners, emergency management, and public health officials BEFORE an emergency exists.

Interagency coordination is a very important part of an effective response.⁴ State and local jurisdictions should consider establishing a high-level position responsible for terrorism response planning.

Written plans, mutual aid agreements, and joint training exercises are effective in preparing strong unified command structures. Once plans are prepared, they must be distributed to the appropriate people and agencies. Tabletop and functional exercises are important to the understanding and implementation of these plans.

Activating the emergency public information system must be an early and continuing action throughout the response in order to help prevent panic, further injuries, and deaths.

During an incident, the state could provide representatives to the local EOC and activate the state EOC. State officials could implement the state disaster plan, activate National Guard units, and, if appropriate, make a state declaration of disaster and request a Presidential emergency declaration for federal response assistance. Once federal resources are activated or a terrorist event has been confirmed, the Federal Response Plan (FRP) will go into effect.⁵

5 EMERGENCY MANAGEMENT OPERATIONS

Suggested Local and State Planning Actions and Items for Inclusion in EOPs and SOPs:

- Revise EOP to include terrorism considerations.
- Review local plans that call for activation of an EOC and make sure an "unusual medical event" triggers.
- Establish criteria that define when "unusual medical events" have reached a level that requires activation of the state EOC.
- Identify key stakeholders and develop training exercises to forge relationships in advance.

⁴ One valuable resource available to planners that addresses interagency coordination is the United States Government Interagency Domestic Terrorism Concept of Operations Plan whose signatories include the Department of Defense, the Department of Health and Human Services, the Federal Emergency Management Agency, the Department of Justice, the Department of Energy, the Environmental Protection Agency and the Federal Bureau of Investigation. It is one example of the efforts to improve the response capability and is available on www.fbi.gov/publications.htm.

⁵ See the Terrorism Incident Annex to the Federal Response Plan (FRP) for more information.

5 EMERGENCY MANAGEMENT OPERATIONS

Response Activities:

Local

- Activate local EOC and implement incident/unified command.
- Activate Unified Medical Branch.
- Request local/state/federal representatives for EOC.
- Implement emergency operations plan.
- Declare local state of emergency (if appropriate).
- Activate public affairs/emergency public information functions.
- Begin epidemiological surveillance.
- Determine whether prophylaxis is appropriate.
- Distribute prophylaxis as necessary.
- Warn/alert/inform public as appropriate.

State

- Provide state representatives to local EOC and FBI's Joint Operations Center (JOC).
- Activate state EOC.
- Implement state emergency operations plan.
- Activate National Guard units.
- Issue state declaration of disaster (if appropriate).
- Request Presidential declaration of disaster (if appropriate).
- Activate public affairs/emergency public information functions.

5 EMERGENCY MANAGEMENT OPERATIONS

Response Activities (continued)

- Appoint state coordinating officers.

Federal

- Provide federal representatives to local and state EOCs.
- Notify Public Health Service, Department of Health and Human Services, Office of Emergency Preparedness and Centers for Disease Control, as necessary.
- Activate EPA as necessary.
- Activate FEMA regional operations center (ROC).
- Activate FEMA emergency support team (EST).
- Activate FEMA disaster field office (DFO).
- Activate and deploy the advance Emergency Response Team (ERT-A).
- Convene catastrophic disaster response group (CDRG).
- Presidential declaration of disaster under Stafford Act.
- Appoint federal and defense coordinating officers.
- Activate FBI JOC as a coordination center for federal activities within the affected geographic region.
- Activate FBI Strategic Information Operations Center (SIOC) in Washington, DC.
- Deploy biological tailored domestic emergency support team (DEST), if requested by the FBI/federal on-scene commander.
- Deploy CDRG elements to assist On-Scene Commander.

6 CARE OF CASUALTIES AND PATIENTS - MODULAR EMERGENCY MEDICAL SYSTEM (MEMS)

Care of presented casualties and asymptomatic, potentially exposed patients (sometimes called "worried well") and the provision of medical prophylaxis form the backbone of the BW Response Template. Other components of the template support and enable these two functions. Significant support for these functions is available from the federal government and is outlined in the Federal Response Plan. Aid coordinated by FEMA and DHHS is outlined in the Implementation section of this document.

The asymptomatic, potentially exposed patients are individuals who believe that they have been exposed to a biological agent, when in fact they have not. They may magnify the number of patients by 5 to 15 times and will require triage and evaluation to distinguish them from the truly ill. Unfortunately, they will seek medical assistance during the most critical time of the incident, and thus, will impact the delivery of care to the victims of a biological attack. During the recent anthrax attacks, 32,000 persons sought and received prophylaxis. Many of these patients needed antibiotic coverage until lab analysis eliminated their need to take medication. Plans should anticipate large numbers of "worried well."

In order to manage this large casualty load, the BW IRP team developed the Modular Emergency Medical System (MEMS) concept to address shortfalls in hospital space, equipment and medical personnel. The MEMS concept was also developed to address the need of a BW response system

that expands and contracts in size, based on casualty counts and acuity. Municipalities need a plan to receive large numbers of victims. The MEMS is an example of one way to address this issue. As hospitals become full, local officials would determine that the medical emergency is overwhelming the community's medical care system and would decide on appropriate activation of a system similar to the MEMS, which is described below and is graphically represented by Figure 2.

The MEMS is expandable depending on the severity of the situation and the resources available within the affected area. By pre-designating the participating medical organizations by community sector and pre-selecting the locations for establishing the emergency medical centers, a community would be better prepared to respond quickly and effectively to a BW event, or other emergencies involving catastrophic numbers of casualties. Further, the MEMS provides a framework into which mutual aid, and state and federal resources could be quickly integrated to expand and sustain local emergency operations.

An important aspect of this modular approach is the ability to expand and contract the number of modules as needed. As the modules become full, others can be opened, and as they begin to empty, the staff can be moved to supplement other modules. As patient medical needs change throughout the incident, so too can the modules change to accommodate them.

Although the MEMS draws on existing federal response plans, known medical procedures, existing medical assets, and outside resources to create an integrated and effective response system, implementing the MEMS requires thinking "outside-the-box"

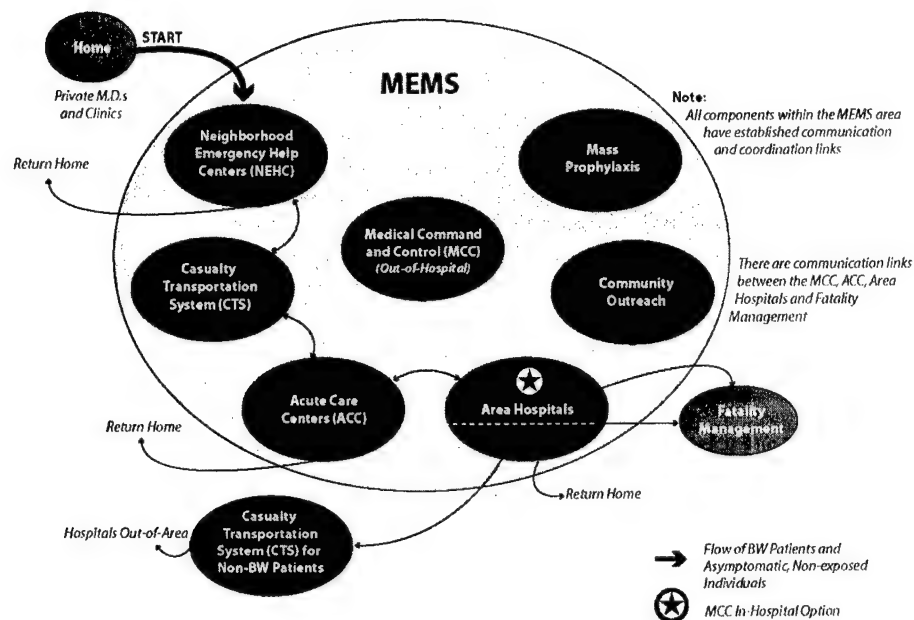


Figure 2. Modular Emergency Medical System

on the part of the local emergency management and health care communities. Agreement with local hospitals needs to be reached to assure they could serve as Medical Command Centers (MCCs) during an emergency. Similarly, other facilities such as local clinics, community centers, or schools need to agree in advance to expand operations and serve as Neighborhood Emergency Help Centers (NEHCs) (or other functions) during an actual response.

The rapid and large-scale expansion of facilities has a critical companion effect: staffing requirements. Until sufficient staff are available from outside resources, communities should consider the use of "physician and nurse extenders" to cover medical staff shortfalls (see section 11 for more details). Under the Emergency Support Function #8, DHHS may activate the National Disaster Medical System (NDMS) to provide Disaster Medical Assistance Teams (DMAT) and other medical professionals to assist in providing care. Standards of care

issues must be identified and addressed, from a medical-legal perspective, to enable professionals to provide optimal care as the situation dictates. Cities should examine liability and workman's compensation issues if physician and nurse extenders are used. Prior to an incident, additional statutory authority may be necessary and should be considered in conjunction with legislative leadership.

The current health care management system includes public and private area hospitals, clinics, outpatient surgery centers, ancillary care organizations (such as the American Red Cross), and private physicians. These elements typically lack "surge capacity" or the ability to expand quickly as the patient care needs increase. However, by planning for and incorporating the MEMS components into the community's existing medical system, it will allow for the needed surge expansion. This is accomplished by activating predesignated communication and coordination links among components and applying additional resources. The MEMS

consists of several components, each of which is briefly described below. For more detailed information on the MEMS, see the Modular Emergency Medical System Pamphlet found on the Homeland Defense web site.

Under the MEMS, public and private area hospitals would admit BW casualties until the hospitals approach full capacity while operating under their internal emergency operations plans. As hospitals become full, they may choose to start discharging non-BW patients earlier than they normally would or they may choose to transfer stable, non-BW patients to distant medical facilities. The National Disaster Medical System (NDMS), managed by the DHHS Office of Emergency Preparedness (DHHS/OEP), could assist in moving those patients to facilities beyond the affected area. Under the NDMS plan, it is the local community's responsibility to move patients from the local hospital to the nearest airport. At the airport, the NDMS would accept the patients and transport them elsewhere.

Medical Command and Control

During catastrophic medical emergencies, such as large-scale bioterrorist attacks, the situation would force area hospitals, clinics, and private medical doctors to forego their normal autonomy and begin functioning as an integrated system. Appropriate command and control is crucial. The key to establishing the command structure of the MEMS is to incorporate it into the community's existing emergency operations plans and established incident command system. Any community that adopts the MEMS, should not have to create new command structures.

The Acute Care Centers (ACCs) and NEHCs should be linked to the area hospitals' medical command centers, which would in turn be linked to the local Emergency Operations Center. The area hospitals would then use their own internal emergency Medical Command and Control to coordinate all assigned sector health care operations to include the Casualty Transportation System (CTS) within their sector.

In an alternate structure, ACCs, NEHCs and the CTS could be established as stand-alone units not associated with area hospitals. Coordination of these elements would then occur directly through the local Incident Command System/Emergency Operations Center.

Neighborhood Emergency Help Center (NEHC)

Local clinics, community centers, schools, and shopping centers of suitable size become NEHCs to provide the primary point of entry into the emergency medical system for BW patients and asymptomatic, potentially exposed patients. The NEHC provides the initial triage, treatment, and is the source of distribution for medical prophylaxis medications. The NEHC was designed, tested, and optimized to handle 1000 patients per 24-hour period. All of the staffing and resources required to operate an NEHC are based upon this high patient throughput. A staff of 80 physicians, nurses, prehospital care providers, clerical personnel and civilian volunteers are needed to operate a fully functional NEHC per 12-hour shift. As the requirement to process more patients increases, additional NEHCs can be opened.⁶ The NEHC is flexible enough to handle different patient flow rates and allows tailoring to the situation.

⁶ A complete description of the NEHC concept is contained in the BW IRP technical report entitled NEHC Concept of Operations. A summarized version of this report is entitled Neighborhood Emergency Help Center Pamphlet: A Mass Casualty Care Strategy for Biological Terrorism Incidents and is available on the Homeland Defense website: (www.hld.sbcom.army.mil)

Figure 3 shows the patient flow in an NEHC. Casualties arrive at the NEHC primarily by their own means and are directed to the Initial Sorting Area as they enter the center. There, patients are rapidly assessed and sorted by triage personnel into two groups, non-ambulatory and ambulatory. All non-ambulatory, critically ill, and expectant patients are issued a control number and transported directly to the Treatment and Stabilization Area. All other patients are issued a control number and directed to the NEHC's Registration Area.

Following registration, non-critical patients are reassessed and categorized at the

Triage and First Aid Area. Patients receive a basic clinical assessment and first aid care, if needed. Patients not requiring care beyond prophylaxis and self-help information are directed to the Out-Processing Area. Patients sent to the Out-Processing Area are given an instructional briefing, issued prophylaxis, if indicated, and discharged. Discharge includes collection of patient records and referral to psychological counseling or other human relief services, as required. Patients identified as needing medical care beyond first aid, during the Triage and First Aid phase, are recategorized and forwarded to the Treatment and Stabilization Area.

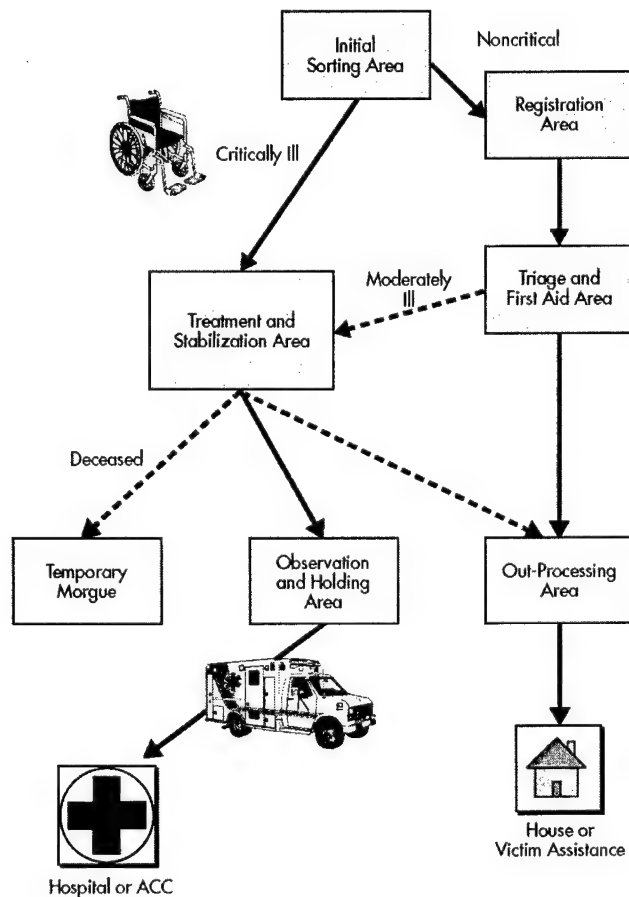


Figure 3. NEHC Patient Flow Diagram

As patients arrive at the Treatment and Stabilization Area, they are assessed, triaged, and provided care in the order of priority. Once stabilized within the limitations of the NEHC capabilities, patients are transferred to the Observation and Holding Area for continued treatment under medical supervision. Patients considered unsalvageable (pre-terminal/expectant) are transferred to the Observation and Holding Area for monitoring and pain management. All other patients transferred to the Observation and Holding Area will continue treatment under medical supervision. The Casualty Transportation System then transports the patients requiring in-patient care to either the hospital or an ACC. Patients whose conditions allow discharge will be released from the Observation and Holding Area and directed to the Out-Processing Area. Deceased patients are pronounced dead by a physician and transferred to the Center's Temporary Morgue.

Acute Care Center (ACC)

The ACC is designed and equipped to provide mass care to patients of a biological terrorism related illness who require in-patient treatment. The ACC will create an environment in which patients who are going to respond to treatment can do so. ACCs will concentrate on providing agent-specific and ongoing supportive care therapy (i.e., antibiotic therapy, hydration, bronchodilators, and pain management) while hospitals focus on the treatment of critically ill patients. The ACC, therefore, will not have the capability to provide advanced airway management (i.e., intubation and ventilator support), Advanced Cardiac Life Support (ACLS), Pediatric Advanced Life Support (PALS), Advanced Trauma Life Support (ATLS), or Neonatal Advanced Life Support (NALS).

Casualties will arrive at the ACC primarily through the casualty transportation system or by ambulances. The MCC will determine where the patients will be admitted (hospital or ACC) and communicate that location back to the casualty transportation services staff. The MCC will also communicate to the ACC that there are incoming patients. Pre-established criteria to guide transfer and discharge decisions would be useful to promote patient movement through the system. This approach would assist the ACC in maintaining maximum bed availability for continued admissions of patients affected by biological terrorism-related illness.

The ACC consists of 1000 beds organized into four wards consisting of five 50-bed nursing units per ward. Each 250-bed ward can be a stand-alone entity. The ACC will likely operate on two rotating 12-hour shifts. A key issue is how to staff the NEHC and ACC functions. These positions will be labor intensive, and federal staffing resources will not be immediately available. As part of the planning process, creative sources of qualified personnel to staff the NEHCs and ACCs must be considered. Suggested minimum staffing per 12-hour shift for an ACC 50-bed nursing subunit follows:

- One physician
- One physician's assistant (PA) or nurse practitioner (NP) (physician extenders)
- Six registered nurses (RNs) or a mix of RNs and licensed practical nurses (LPN)
- Four nursing assistants/nursing support technicians
- Two medical clerks (unit secretaries)
- One respiratory therapist (RT)
- One case manager
- One social worker
- Two housekeepers
- Two patient transporters

Planning should include communicating medical staffing shortfalls through the local Emergency Management Agency (EMA) and public health agencies to the State Emergency Management Agency, which will address this shortage by utilizing state resources, mutual aid resources, and by requesting federal support. This is discussed in more detail in Section 11, Logistics and Resource Support. There are a number of operational considerations to examine and incorporate into ACC planning activities. More detailed information on each one can be found in the Acute Care Center Pamphlet or Concept of Operations for an Acute Care Center.

Communities should expect to be self-sufficient for up to 72 hours following an attack. In addition, some medical supplies are available via the CDC's National Pharmaceutical Stockpile Program. More information is available via their web site, www.cdc.gov.

Community Outreach (CO)

The purpose of the CO effort, in the context of the MEMS, is to disseminate information related to the incident, to assess the affected community/area, and to support mass prophylaxis, if indicated. A secondary purpose of CO may be to provide limited services such as patient assessment and triage.

As traditional non-medical buildings are converted into treatment facilities, such as NEHCs and ACCs, the transition needs to be communicated to the community. CO may simply be a vehicle for disseminating information. In planning, the CO component must be structured so that it can either be an intense effort lasting for a few days, or a more extended one lasting several weeks.

There are many ways for a community to conduct a CO effort. Many of the options are not appropriate for every situation or for every municipality. Each locality will need to determine which method, or combination of methods, would be the most appropriate for their situation.

POSSIBLE METHODS FOR CO

Possible Methods for CO:

- Use of the Media
- Reverse 911 Calls
- Establish an 800 number
- Establish an internet website
- Flyer Distribution
- U.S. Postal Service
- Faxed Notices
- Public Briefings
- Information Booths
- Use Community Organizations
- Door-to-Door Canvassing
- Ask Citizens to Call in

DOOR-TO-DOOR CANVASSING

Considerations for Door-to-Door Canvassing:

- Visit every household or select certain neighborhoods to visit?
- What is to occur at each home?
- How long should each visit take?
- How long will it take to travel between homes?
- What should be done if no one answers the door?
- Ensure security for canvassing teams.
- Develop procedures for recording visits

Door-to-door canvassing is the most labor intensive but also the most thorough method of reaching people. By physically going to every door, one will know exactly who received the message and who did not. It also allows more detailed information to be obtained such as exactly who and how many people reside at each address, and of those, who is sick versus who is well.

Planners should consider the exact mission(s) that they want to assign to the outreach effort. Whether or not the agent is communicable will help determine what the mission will be. The community outreach effort may require CO workers to distribute information, collect information on the perceived target population, distribute prophylaxis, triage patients, or determine the transportation requirements to move patients, especially those who could not access the NEHC, throughout the MEMS system. Most likely it will be a combination of several missions.

The geographical, cultural, and social make-up of the community will greatly effect how the outreach program will operate and how many resources will be required.

Is the affected area a large community with high-rise apartment buildings or a suburban area consisting of single-family homes? It would be easier to canvass a single apartment building than one hundred individual houses. It may be helpful to contact building managers for assistance and information before starting the effort or ask them to distribute information.

Does the community have a large transient population? This may mean that the affected

population might be more dispersed that one would normally expect.

Does the community have a large mix of ethnic groups or populations that do not speak English? How will the information reach people who cannot read or understand English?

Time is the final determinant. Depending on the agent, the incident may last a few days to several weeks. For a CO effort to be effective, the response must be assembled and executed quickly.

72-HOUR CONTACT

The effort must be able to contact all of the people in the target population within 72 hours or the outreach effort will lose its effectiveness as the event either escalates out of control or rapidly winds down.⁷

Casualty Transportation System (CTS)

The casualty transportation system would initially transfer non-BW hospital patients to remote locations or to the airport to be evacuated by the NDMS in order to provide additional hospital space for BW patients. After the initial set of hospital transfers, the CTS would provide patient transportation between the NEHC, the ACC, and the Area Hospital. It is expected that the local EMS service will not be available to provide this service and the community would need to find its own fleet of vehicles and drivers. These could come from private ambulance services, community buses, private bus companies, or from the military.

⁷ For a more detailed description of the CO component, see the Community Outreach / Mass Prophylaxis Pamphlet also located on the Homeland Defense web site.

6 CARE OF CASUALTIES AND PATIENTS - MODULAR EMERGENCY MEDICAL SYSTEM (MEMS)

Suggested Local Planning Actions and Items for Inclusion in EOPs and SOPs:

- Create Modular Emergency Medical System (MEMS).
- Coordinate MEMS with all Hospital Emergency Preparedness Plans (EPPs).
- Consider legal issues such as liability of providers and workman's compensation.
- Formulate plans to integrate mutual aid, state, regional, and federal assistance.
- Consider developing a detailed questionnaire for rapidly collecting victim identification and background information (such as where they were in the previous few days, etc.).
- Plan for requesting additional staffing.
- Initiate or support legislation to expand the authority of emergency medical and other pre-hospital personnel who may be called upon to assist in response to a BW incident.

Response Activities:

- Admit casualties until hospitals reach maximum capacity. Implement hospital disaster plan as maximum capacity is reached.
- Close hospitals to non-critical admissions.
- Provide notification of significant incoming casualties to affected personnel and facilities.

6 CARE OF CASUALTIES AND PATIENTS - MODULAR EMERGENCY MEDICAL SYSTEM (MEMS)

Response Activities (continued)

- Establish and operate Medical Command Centers (MCCs) at area hospitals.
- Establish and operate Acute Care Centers (ACCs) to provide definitive and supportive care to acute patients.
- Establish and operate Neighborhood Emergency Help Centers (NEHCs) to provide triage, distribution of medical supplies, and coordination of community outreach (CO).
- Send asymptomatic, potentially exposed individuals home.
- Send acutely ill to ACCs.
- Establish a transportation control center (dispatch, maintenance, fueling).
- Establish transportation staging areas (bus, ambulance, air, rail).
- Transport acute BW patients.
- Provide traffic route management.
- Establish methods for tracking patient's movements in the system.
- Establish community outreach by sectors.
- Conduct initial outreach by sectors (door-to-door sector survey, provide medical information).
- Conduct full community outreach with citizen home help mobilization.
- Activate non-infected patient relocation system.
- Identify destinations for patient relocations.

7 MASS PROPHYLAXIS

Results of medical diagnosis, and the epidemiological and criminal investigations could be used by local officials to assess whether a major health event was occurring, to help determine the potential cause(s), and to identify the population at risk. Local officials could then make informed decisions on medical prophylaxis, treatment, containment, and quarantine measures. They could also decide on activation of an Emergency Operations Plan (EOP) and if and when to request outside assistance. These difficult decisions would drive the emergency response components of the plan and may need to be made on a presumptive basis and then acted on immediately to achieve timely prophylaxis and to keep pace with the onset of casualties.

The Mass Prophylaxis component of the template involves the distribution and medical application of appropriate antibiotics, vaccines, or other medications in order to prevent disease and death in exposed victims. However, the speed with which medical prophylaxis can be implemented effectively is critical to its success.

In order to conduct a mass prophylaxis effort, the target population and course of treatment must be identified. Depending on the type of incident and how much information is available to the region's officials, prophylactic treatment may be appropriate for all of the population in the affected area, or for only a subset of it.

Dispensing of medications could occur through existing medical institutions or through an emergency system such as the Modular Emergency Medical System (MEMS).

In addition, local policy should be developed that provides priority emergency antibiotic prophylaxis for use by "essential" first responders and health care personnel, in order to allay their fears and help ensure their continued presence during the response. A specific list of such personnel should be developed in advance. The list may include family members of the first responders and health care personnel because if they are not cared for, some first responders may stay home to care for their families or move them out of the area. During a response effort, in addition to receiving priority for prophylactic treatment, the health of these essential personnel should be monitored to ensure that those crucial activities for protecting and taking care of the general public can continue.

Should prophylaxis shortages develop during the early phases of the incident, the antibiotic issuance could be limited to a one- or two-day course of treatment pending identification of the agent. Medications for emergency responders should be provided from a stockpile separate from the general public resources to ensure their availability. Public acknowledgment should be made to avoid the appearance of impropriety.

Very few communities have enough antibiotics currently available to them for mass prophylaxis programs. For this reason, the Centers for Disease Control and Prevention (CDC) has developed a cache of medications and medical supplies specifically for use during a chemical or biological terrorist attack. This cache is known as the National Pharmaceutical Stockpile (NPS). The CDC can deliver the stockpile to any community in the continental United States within 12 hours of the decision to release the stockpile. If additional supplies and

pharmaceuticals are required, the CDC operates a Vendor Managed Inventory (VMI) program to provide situational specific supplies. States and communities should incorporate requesting, acquiring, and distributing the NPS and/or VMI into their emergency operations plan.

The following should be considered when writing plans to address the request, receipt, repackaging, and distributing of the NPS:

1. Identify an official responsible to accept receipt of the NPS (also alternate designees)
2. Identify an appropriate health care practitioner to receive the controlled substance portion of the NPS
3. Choice of airfield
4. Cargo handling equipment
5. Facility for breakdown and repackaging of the NPS
6. Storage and security of the NPS
7. Repackaging of NPS, especially the prophylactic medications
8. Tracking of the NPS assets
9. Trucks and personnel to move supplies from the airfield to distribution/dispensing sites
3. Break cargo containers down at the airfield and further break down that portion of the NPS containing the prophylactic medication into unit doses for first responders. The remainder is then delivered to the locality in bulk for further breakdown and repackaging. Each community will need to plan for repackaging resources at the local distribution site.
4. Repackage the NPS at a site closer to the area's population center.
5. Dispense oral drugs through local pharmacies equipped to repackage into individual treatment courses.
6. Repackage NPS oral medications using the facilities of a local mail out/online pharmacy.
7. Use one of the seven Consolidated Mail Outpatient Pharmacies (CMOPs) of the Department of Veterans Affairs (VA) to conduct repackaging.

There are several methods for the breakdown of the NPS. In brief, they are as follows:

1. Breakdown the entire NPS at the airfield and move the smaller, repackaged supplies to the dispensing sites.
2. Move the NPS in bulk to the distribution sites and commence repackaging activities at each location or at a location central to most of the dispensing centers.

In the MEMS construct, mass prophylaxis programs should complement the NEHC. Any mass prophylaxis program, beyond what the NEHC can provide, will require a community outreach effort to provide medications to affected individuals who did not make it to an NEHC. If the agent is communicable, it may be advisable to dispense prophylactic medications to the population through community outreach to limit the exposure that can occur if large numbers of people report to locations where infected patients are being or have been cared for. Therefore, the previously described community outreach resources will apply to mass prophylaxis efforts as well. Provisions must be made to obtain and document patient consent to receive treatment. Tracking requirements will be similar for mass prophylaxis as for other community outreach activities (at minimum: name, address including zip

code, allergies, gender, age, and if currently sick or not).

If the method of distributing medications involves having the public go to a community location to receive medications, then security at each site will be necessary, particularly if there is any measure of panic.

In areas of multi-ethnicity, interpretative services will need to be planned for and available. This includes persons who can interpret verbal as well as printed material. At the dispensing site locations, this will be particularly important for the screening process (consent and allergies).

If the NEHC concept is not adopted, then each mass prophylaxis site should consider the advantages of sorting people upon arrival based on whether they are exhibiting symptoms or not. This may be especially applicable in situations where the agent has not yet been positively identified and the possibility exists that it could be communicable. While plague and smallpox are the usual communicable diseases discussed in the context of biological incidents, both may be difficult to identify prior to executing a mass prophylaxis effort, and therefore, separating the symptomatic from the non-symptomatic holds merit. However, the asymptomatic group may include incubating cases.

Early coordination on decision-making regarding prophylactic treatment among all agencies, especially public health, medical, law enforcement, and emergency management, is essential in a successful mass prophylaxis campaign. Finally, in multi-jurisdictional regions, cooperative planning is essential in executing effective community outreach and mass prophylaxis

programs. Many people live in one jurisdiction while working in another. For this reason, mutual planning and field-testing is strongly encouraged.

7 MASS PROPHYLAXIS

Suggested Local Planning Actions and Items for Inclusion in EOPs and SOPs:

- Determine departmental responsibility and plan for supply and dissemination of prophylaxis.
- Plan to provide personnel to break down the bulk pharmaceuticals into unit doses for distribution.
- Consider developing policies and procedures for sharing information among the criminal investigation team, the public health department, and those responsible for mass prophylaxis.
- Identify points of contact for each area of support and establish lines of communication.
- Consider creating a common database for compiling similar information that responding agencies may need.

7 MASS PROPHYLAXIS

Response Activities:

- Activate prophylaxis distribution plan through mass dispensing site (i.e. Neighborhood Emergency Health Centers (NEHC) (which is described later in component #8), community outreach or no other means).
- Request the National Pharmaceutical Stockpile.
- Develop follow-up plans for addressing prophylactic regimes that require several administrations of vaccine or boosters.

8 FAMILY SUPPORT SERVICES

In addition to local, state, and federal assistance, and victim and family support services, the American Red Cross, along with other agencies, can provide information hotlines and implement central coordination of volunteer service organizations. Victim and family support services would include mutual aid assistance from surrounding communities.

The U.S. Department of Justice, Office of Justice Programs, Office for Victims of Crime, has published a report based on victim assistance efforts following the April 19, 1995 bombing of the Alfred P. Murrah Federal Building in Oklahoma City. The lessons learned are equally applicable to victims of bioterrorism attacks and are summarized as follows:

1. An effective response to victims of terrorism is dependent upon prior planning and coordination.
2. Defined to include not only primary victims and families but also all personnel who respond to the incident
3. Identifying, setting aside, and effectively managing resources are key to providing a comprehensive response.
4. State and federal laws mandate that certain rights and services be afforded to victims.
5. Victims of terrorism are considered victims of a federal crime, but there may be many different agencies at different levels of government involved in the response.
6. Victims must be identified quickly and given access to information and services.
7. Services and support must be victim sensitive and easily accessible.
8. Cases involving large numbers of victims require special measures to ensure that adequate information and support to all victims is provided in a timely and effective manner.
9. The impact of terrorism is not limited to physical injury and property damage.
10. Victim notification about and participation in the criminal justice process is an important aspect of how many victims come to terms with the criminal event.

Good hospitality towards families should promote public cooperation with law enforcement officials conducting the criminal investigation. Consider using the same checklists developed for investigators when talking with families. This would provide consistency in data gathering regardless of who interviewed the individual(s). An extension of the family support services response component is

providing disaster stress relief assistance to first responders and other members of the response team, mental health and human services workers and potentially the general public, depending on the magnitude of the event.

8 FAMILY SUPPORT SERVICES

Suggested Local Planning Actions and Items for Inclusion in EOPs and SOPs:

- Hospital Emergency Preparedness Plans should reference local emergency response plans for family support services.
- Plan for social support or "disaster stress relief" that is available to the general public if incident indicates this need.
- Plans should include a critical incident stress management component that provides methods for decreasing the level of stress felt by response personnel, such as rotation of workers between low, mid and high stress tasks, and adequate rest and breaks from the disaster rescue and recovery activities. Health care workers, first responders, and the public must also be included in these plans.

8 FAMILY SUPPORT SERVICES

Response Activities:

- Use existing public information system(s) to provide family support services information to the community.
- Implement central coordination of volunteer service organizations.
- Provide family non-medical assistance service.
- Conduct next of kin notification.
- Perform crisis counseling.
- Provide logistic support to families.
- Provide legal services.
- Provide insurance information and assistance.
- Provide translation services.
- Seek State Department liaisons for foreign victims.
- Implement state/federal assistance programs.
- Activate/operate disaster assistance center.
- Provide temporary housing assistance.
- Provide individual and family financial assistance.
- Conduct community memorial services.
- Provide grief counseling.

9 CONTROL OF AFFECTED AREA/POPULATION

Control of the affected area and population is divided into two major sub-elements: 1) physical control, and 2) public information and rumor control. Together, these two elements help maintain order, inform the population and facilitate an organized emergency response. Physical control includes crowd control and security at hospitals, emergency medical facilities, fatality handling sites, and other vital installations such as airports, utility sites, harbors, bridges, and tunnels. In addition, activities that control the affected area also provide excellent opportunities for isolation and preservation of the crime scene, if one is identified. Managing the affected area also involves management of potential evidence, such as contaminated materials and victims.

Traffic management must provide ingress and egress control for essential personnel, for equipment and residents within the affected community, and to and from staging areas. The affected areas within the locality could be patrolled to maintain security as warranted. For instance, in the case of a subway attack, only a small percentage of the population might be exposed; however, this population could come from a wide geographic region. In this situation, patrol of affected residential areas probably would not be warranted. Conversely, in a scenario where an agent is sprayed in a major metropolitan area and carried via wind across the entire community, as much as ninety percent of the resident population could be incapacitated in certain areas and security patrols of such areas may be needed.

As NEHCs and ACCs (described in Section 6 of this document) are set up, parking, traffic management, and security issues need to be addressed around each of these facilities. Presumably, many people will drive themselves to the NEHC for care and then be transported via the CTS to be admitted to the ACC. When this occurs, the patients' cars will remain at the NEHC. As hundreds or even thousands of patients are admitted from each NEHC, the amount of parking required will be enormous. Security will also be needed in the areas where these cars are parked, as they may remain there for the duration of the crisis.

Public information and rumor control are vital for informing and instructing the population in ways that enhance emergency response and avoid panic. Activities should include posting key information on easily accessed web sites, establishing and operating a community hotline, providing information to the media, and distributing self-help fact sheets. Strict management of information and ensuring that all disseminated information is timely and accurate are crucial activities of the command structure in order to prevent panic and maintain public cooperation. The media should be considered an essential participant in disseminating official information and updates, as well as in gaining useful information for the criminal investigation (for example, photographs or videotapes of suspects).

9 CONTROL OF AFFECTED AREA/POPULATION

Suggested Local Planning Actions and Items for Inclusion in EOPs and SOPs:

- Local law enforcement should establish physical security plans that address a potential biological terrorist event.
- Consider establishing and promulgating a policy that only public affairs officials or public information officers (PIOs) talk to the press. (Augmented by medical professionals to accurately convey medical information.)
- Establish points of contact for local public affairs office with the law enforcement/fire departments and hospitals.

9 CONTROL OF AFFECTED AREA/POPULATION

Response Activities:

- Provide security at each hospital/medical facility.
- Provide security at Neighborhood Emergency Help Centers (NEHC).
- Provide security at Acute Care Centers (ACC).
- Provide security at central processing and morgues.
- Provide ingress/egress control for essential personnel, equipment, and residents.
- Provide escorts for emergency equipment and personnel from staging areas.
- Patrol affected areas.
- Provide security at vital installations - airports, communication and utility sites, harbors, bridges, and tunnels.
- Review existing emergency public information materials - revise/reproduce.
- Establish and operate local 1-800 hotline.
- Provide material to media (internet, TV, radio, newspapers).
- Activate emergency alert system (EAS).
- Conduct senior officials press conference.
- Establish and maintain Media Center.
- Conduct scheduled press briefings.
- Provide joint press releases.

10 FATALITY MANAGEMENT

Medical prophylaxis and treatment of casualties according to established health protocols will reduce death and suffering following a BW attack. However, fatalities still are likely to occur and may occur in large numbers.

The template includes the use of morgues to provide rapid central processing of remains and the establishment of long-term storage facilities using refrigerated trucks, rail cars, or other containers to hold remains until final disposition. Additionally, DHHS/OEP can deploy Disaster Mortuary Operational Teams (DMORTS). Appropriate officials will need to make a decision on the final disposition of remains. Options for the final disposition of remains could include (1) mass cremation, (2) mass burial, and (3) release of remains to families for normal disposition. Temporary interment is an option that might be used while awaiting final disposition.

Remains contaminated with biological agents may present health concerns and may need to be disposed of according to established protocols. Safe handling procedures will need to be established for criminal investigators handling BW fatalities, including those activities to identify the dead such as fingerprinting and photographing.

10 FATALITY MANAGEMENT

Suggested Local Planning Actions and Items for Inclusion in EOPs and SOPs:

- Create fatality management plan (must deal with potential for overwhelmed community morgues and the religious concerns of relatives).
- Establish safe handling procedures for criminal investigators and other personnel who handle BW fatalities or are involved in identification of the dead (fingerprinting, etc.)
- Involve medical examiner, clergy, and funeral directors in the planning.

10 FATALITY MANAGEMENT

Response Activities:

- Maintain mortuary registry of similar deaths.
- Manage high volume of relatives seeking deceased relatives.
- Use morgues to provide central processing of fatalities.
- Establish long-term fatality storage facilities until final disposition.
- Determine final disposition for fatalities.
- Establish Family Assistance Centers.
- Implement mass cremation option (incineration sites, record keeping, memorialization).
- Implement mass burial option (site location, record keeping, memorialization).
- Implement release of remains to families option.
- Implement temporary internment option.

11 LOGISTIC AND RESOURCE SUPPORT

The logistic and resource support component of the BW response appendix of an EOP plans for establishing staging areas and distribution points for incoming personnel and supplies. It is likely that most if not all 12 of the Emergency Support Functions (ESF) under the Federal Response Plan would be activated. Statements of needs and prioritization for equipment, personnel, and services would have to be established. Supplies would be delivered to the response sites from the staging areas and distribution points. A central reception center would receive incoming mutual aid as well as state and federal support personnel and provide instructions, accreditation, and assignments.

The issue of finding adequate numbers of medical professionals to staff an ACC or an NEHC is one that requires creative planning. Planning should consider the use of "physician and nurse extenders" to cover staffing shortfalls. These "extenders" may include dentists, chiropractors, podiatrists, veterinarians, senior level medical students, nursing students, retirees, and other medical specialists. These extenders could, through necessity, assume broader roles in providing medical care to mass casualties. When using physician and nurse extenders, it is important to address the attending legal issues and to establish Memoranda of Agreement (MOA) with the appropriate institutions as part of the planning process. Positive identification of individuals and verification of licensure is critical.

Local communities will need to negotiate mutual aid agreements that specify where

additional staff may be obtained while awaiting the arrival of federal resources. It is not expected that an affected community will have the extra staff resources to open an ACC independently. The affected community may have enough extra staff to open an NEHC, but they may not want to open the NEHC until they can open both the NEHC and the ACC at the same time. Clearly, the majority of ACC staff will have to come from outside the affected area.

When metropolitan areas consider how many medical staff they have available, planners should remember that many health care professionals often work at more than one hospital. Thus, there is a possibility that many staff will be "double counted" resulting in an overestimation of available health care professionals. During the crisis, each provider will probably only work at one place, forgoing his or her responsibilities at the other hospital(s).

Furthermore, planning should include communicating medical staffing shortfalls through the local Emergency Management Agency (EMA) and public health to the state EMA for further discussion with state and DHHS offices that are responsible to forward projected health and medical staffing shortfalls to the DHHS OEP. As the lead support agency under FRP ESF #8, DHHS is responsible for assisting communities with preplanning and mobilization of health and medical personnel. DHHS OEP is heading up a national effort to assist select communities in developing local Metropolitan Medical Response Systems (MMRS).

77 LOGISTIC AND RESOURCE SUPPORT

Suggested Local Planning Actions and Items for Inclusion in EOPs and SOPs:

- Create and assign responsibility for resource support plan.
- Create and assign responsibility for logistic support plan.

77 LOGISTIC AND RESOURCE SUPPORT

Response Activities:

- Establish staging areas (air, ground, sea, rail) to receive and distribute incoming mutual aid, state, federal, and military support.
- Establish procedures for distribution of supplemental aid.
- Operate transportation coordination centers.
- Develop statements of needs and prioritization for equipment, personnel, and services.
- Provide local delivery to users from distribution points.
- Provide housing, feeding, and sanitation to emergency responders initially until the American Red Cross and other support agencies arrive to assume this responsibility.

12 CONTINUITY OF INFRASTRUCTURE

The continuity of infrastructure components would activate local continuity of operations plans when disaster-related absenteeism exceeds critical thresholds or if critical infrastructure is attacked. Critical infrastructure facilities would implement emergency staffing plans to sustain response operations. Telecommunications providers must be involved to activate their emergency communication plans to establish priorities and to initiate call blocking and cellular augmentation. Planning must include communications redundancy. Electrical power generation, water, and transportation would activate their emergency staffing plans as required.

12 CONTINUITY OF INFRASTRUCTURE

Suggested Local Planning Actions and Items for Inclusion in EOPs and SOPs:

- Assign responsibility for completion of a local Infrastructure Plan.

12 CONTINUITY OF INFRASTRUCTURE

Response Activities:

- Activate Continuity of Operations Plans (COOP) when absenteeism exceeds the critical threshold.
- Close business offices; minimize contact with the public.

12 CONTINUITY OF INFRASTRUCTURE

Response Activities (continued)

- Maintain essential operations.
- Activate employee information network.
- Identify essential personnel to EOC.
- Activate mutual aid plans.
- Implement emergency services staffing plan.
- Use non-conventional resources to transport response personnel (bus, taxi, private sector).
- Prepare situation updates/ briefings/ reports.
- Provide critical incident stress management and support services/counseling for responders' families (daycare, transportation, assistance, etc.).
- Activate emergency communication plan (prioritization, call blocking).
- Activate telecommunications emergency staffing plan.
- Establish cellular augmentation.
- Activate electric power, water, and transportation emergency staffing plans.
- Augment disposal of biohazard material (augment private industry disposal services).
- Augment sanitary facilities at ACCs and other emergency facilities.
- Augment pest control at ACCs and other emergency facilities (augment private industry services).

13 RESIDUAL HAZARD ASSESSMENT AND MITIGATION

Residual hazard assessment and mitigation, sometimes called environmental surety, involves activities that would assess and protect the population from further exposure to potential environmental hazards. Normally, the risks from residual BW agents are small compared to those from the actual attack, but they may still warrant attention once the more immediate threats have been addressed. Most biological agents will not survive in the environment for very long without a host. Naturally occurring ultraviolet light and heat will normally kill most agents within an hour. By the time that the community recognizes that a problem exists, the initial agents may already be killed. The spores of *Bacillus anthracis* (the causative agent of anthrax) can survive in the ground for decades. Therefore, there is a concern that reaerosolization could become a hazard. Recent anthrax letter incidents have shown that there is a hazard from reaerosolization. The amount of reaerosolization depends on the sophistication of the weaponer, the size of the spore, and whether anything has been added to the spore to alter its static electric charge.

Public health officials, environmental agencies, coroners and/or medical examiners, and others must work together to identify and arrange for the decontamination of residual hazards. These tasks are the shared responsibility of local, state, and federal environmental and health agencies. Assessment and mitigation may include environmental sampling of air, water, and soil, as well

as surface swipes and insect and animal screening for the BW agent.

Vector and animal control measures may be needed. Decontamination would be site specific and may be required for certain "hot spots" around the area of release or for the interior of buildings and other enclosures. Emergency operations plans should not specify the methods of decontamination, as these will be site and agent-specific. Decontamination of live humans is usually not appropriate when discussing bioterrorism incidents, other than toxins, since the human immune system is the primary method of defending the body against "contaminants." Contaminated human remains may have to be cremated to prevent the spread of infection or secondary contamination.

A mitigation strategy for protecting public and private buildings is to employ some method of protection against airborne hazards. The natural and passive protective characteristic that buildings possess is simply the natural barrier between inside and outside. Active protection involves air filtration applied to the intake of air from outside or recirculated air from inside the building. For more information about building protection see SBCCOM's building protection web site at: <http://buildingprotection.sbccom.army.mil>.

13 RESIDUAL HAZARD ASSESSMENT AND MITIGATION

Suggested Local Planning Actions and Items for Inclusion in EOPs and SOPs:

- Assess key buildings for use of passive or active protection features.
- Consider implementing passive or active protection features in key buildings.
- Determine departmental responsibility for vector and animal control.
- Establish protocols for timely sharing of information among the key agencies involved and the criminal investigation team.
- Develop testing and sampling protocols and agreements with appropriate labs.

13 RESIDUAL HAZARD ASSESSMENT AND MITIGATION

Response Activities:

- Conduct environmental sampling (air, water, soil, surface swipes, and insect and animal screening).
- Conduct local area control and decontamination.
- Perform vector and animal control measures.

IMPLEMENTATION

A local community can prepare to respond to a biological incident or other catastrophic medical emergency through planning. Additional costly infrastructure and equipment are not necessary. Improved surveillance of early indicators of a disease outbreak requires an ongoing, but not a large, effort. A community's key first steps in developing a response plan are to engage the local health community in the planning process and to obtain their support to function as an integrated emergency medical system during such an emergency. The municipality and medical community must then pre-designate the roles of hospitals, clinics, and facilities within that system. Responsible agencies and teams likewise must be designated to plan the response activities for the other elements of the response template. The local community also could include biological response exercises as a part of their annual emergency/disaster exercise program. A community then would be better prepared to respond quickly to a biological incident and establish a framework into which mutual aid, state, and federal resources would be efficiently integrated.

There are many resources available to support a community that has been attacked by terrorists using a BW agent. The state can coordinate and mobilize intrastate and interstate mutual aid, National Guard, and federal support for a community responding to a BW attack. Communications and coordination between local, county, regional, state, and the federal government are critical for obtaining timely and effective support. States also can mobilize statewide communications and notify the medical community (e.g., hospitals and emergency medical services [EMS])

throughout the state and in surrounding states. Additionally, the governor can declare a state of emergency and thereby can suspend various rules and regulations during the emergency. The state can help control rumors by coordinating public information throughout the state. State emergency public information systems can be used to rapidly disseminate information statewide. The flow of requests for support is shown in Figure 4.

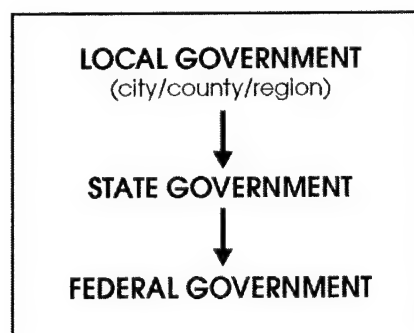


Figure 4. Flow of Requests for Support

Examples of state support to cities include the following:

1. Mobilize EMS providers from outside the local community
2. Coordinate fatality management and disposition of bodies
3. Waive or relax state regulations in an emergency
 - a. Hospital regulations
 - b. Licensing of providers
 - c. Vaccinations and prophylactic drugs
4. Authorize local communities to use state-owned facilities
5. Acquire pharmaceuticals from vendors
6. Implement quarantine and isolation as needed

Local communities, states, and federal agencies should work jointly on planning and exercising for a major catastrophic medical emergency to include a terrorist BW event. They should work to identify, establish, and maintain key relationships. Due to limited resources available in small cities and towns, states should plan to provide significant levels of support to many of these communities, especially in rural areas.⁸

When confronted with a major public health disaster or emergency, state and local governments will need to lead the effort without federal support for at least the first 24 hours. Communities should look at the resources that exist in their community and the surrounding area. Once they have identified the potential

gaps, they can make plans to fill those gaps in the event of a major disaster. As with any catastrophic emergency, regional and state support should not be eliminated from the discussion, as such aid will arrive faster.⁹

ESF # 8 will utilize resources primarily from within DHHS, including support agencies identified in the FRP and the National Disaster Medical System (NDMS), a nationwide mutual aid network that coordinates support from federal agencies, pharmaceutical suppliers, hospital supply vendors, and the National Foundation for Mortuary Care. ESF #8's framework provides for support functions that pertain not only to a medical disaster or emergency, but also to a biological terrorist attack. This framework is summarized in the following table.

⁸The key reference for local and state governments to use in this planning process is the Federal Response Plan (FRP). The FRP outlines how the federal government implements the Robert T. Stafford Disaster Relief and Emergency Act to assist state and local governments when a major disaster or emergency overwhelms their capability to respond effectively. The FRP describes the policies, planning assumptions, concept of operation, response and recovery actions, and responsibilities of 27 federal departments and agencies, including the American Red Cross, that guide federal operations following a Presidential declaration of a major disaster or emergency. The FRP has proven to be an effective framework for coordinating delivery of federal disaster assistance to state and local governments. The document can be obtained from FEMA's website at <http://www.fema.gov/r-n-r/frp/pdfs.htm>.

⁹The primary federal agency responsible for directing the assistance provided through Emergency Support Function (ESF) #8 is the Department of Health of Human Services (DHHS). The DHHS Regional Health Administrators, as the operating agents, are responsible for directing regional ESF #8 activities. A Regional DHHS office will coordinate with state and local public health officials to determine current medical requirements.

Summary of Federal Agency Emergency Health Services Functions

SUPPORT FUNCTION	LEAD DHHS AGENCY	DESCRIPTION
1. ASSESSMENT OF HEALTH/MEDICAL NEEDS	Office of Public Health and Science/Office of Emergency Preparedness/National Disaster Medical System (OPHS/OEP/NDMS)	Mobilize and deploy an assessment team to the disaster area to assist in determining specific health/medical needs and infrastructure needs.
2. HEALTH SURVEILLANCE	Centers for Disease Control and Prevention (CDC)	Assist in establishing surveillance systems to monitor the general population, carry out field studies and investigations, monitor disease patterns and potential disease outbreaks, and provide consultations on disease precautions.
3. MEDICAL CARE PERSONNEL	OPHS/OEP/NDMS	Provide Disaster Medical Assistance Teams (DMATs) and individual public health and medical personnel to assist in providing care. DMATs can provide triage, medical or surgical stabilization, and continued monitoring until patients can be evacuated to location where they will receive definitive care. In addition to DMATs, Active Duty, Reserve, and National Guard units can be deployed as needed for casualty clearing or staging, and also for other missions.
4. HEALTH AND MEDICAL EQUIPMENT AND SUPPLIES	OPHS/OEP/NDMS	Provide health and medical equipment and supplies, including pharmaceuticals and biological products in support of DMAT operations and for restocking health and medical care facilities. CDC has the lead role on the task of stockpiling pharmaceuticals for the federal government.
5. PATIENT EVACUATION	OPHS/OEP/NDMS	Provide for movement of seriously ill or injured patients from the area affected by a major disaster or emergency to locations where definitive medical care is available. NDMS evacuations will be accomplished primarily using DoD resources.
6. IN-HOSPITAL CARE	OPHS/OEP/NDMS	Provide definitive health care to victims who have become seriously ill as a result of a BW incident. For this purpose, NDMS maintains a nationwide network of voluntarily pre-committed, non-federal, acute care hospital beds in the largest U.S. metropolitan areas.
7. WORKER HEALTH/SAFETY	CDC	Assist in assessing the health and medical effects of biological exposures on the general population, collecting and analyzing relevant samples, advising on protective actions related to direct human and animal exposure, providing technical assistance on medical treatment, and decontaminating biologically injured victims.
8. PUBLIC HEALTH INFORMATION	CDC	Provide public health and injury prevention information for transmission to the population located in the areas affected by a BW incident.
9. VICTIM IDENTIFICATION/MORTUARY SERVICES	OPHS/OEP/NDMS	Provide NDMS Disaster Mortuary Teams (DMORTs), temporary morgue facilities, fingerprint/dental/forensic pathology identifications, and disposition of remains.

While the federal government can provide support personnel and supplies, arrangements for medical transportation and facilities should be made at the most local level possible. Normally, local authorities will handle local transportation requirements.

If local medical transportation resources are inadequate, then county and state resources should be used to support the local community. If it is determined that state resources are inadequate to meet the requirements, a request for federal medical transportation assistance will

be coordinated at the national level through the use of the patient evacuation component of NDMS.

By leveraging existing state and federal resources and plans, local health departments can create a strong response framework for a modest cost. The local community's main effort would be to prepare and exercise response plans and protocols for a catastrophic medical emergency and provide facilities and transportation. Such efforts contribute to establishing a framework that can incorporate mutual aid, state, and federal assistance.

CONCLUSION

This is analysis of domestic response to an act of biological terrorism. The approach presented represents an integrated, multi-agency, local, state, and federal effort to improve domestic response to a biological terrorist incident.

Readers are encouraged to use the guide to enhance their current EOPs and SOPs. It is important that communities build their planning effort from existing capabilities and plans. This guide and the supporting documentation referenced previously are also useful in providing a convenient starting point for local communities to plan and implement their own BW response system. Local planning before an incident and rapid implementation following an incident will improve the ability of a locality to cope with a major BW terrorist attack.

Communities should consider the following four planning questions when designing and evaluating their BW response plans:

1. Who will be in charge of the community response?
2. What scale of biological attack are preparations being made for?
3. What is the role of emergency management?
4. What is our community's strategy to deal with asymptomatic, potentially exposed patients and critically ill victims when local hospital capacity is exceeded?

Imperative to the successful implementation of the BW Response Template is the approach that it will not function as a series of disassociated and separate components. Rather, it must function as a

full and integrated system. The best strategy in preparing for an effective response to BW terrorism would be to effectively manage existing resources to accommodate the complexities of a BW attack. Existing emergency response systems should be leveraged when crafting BW response plans. A state's and community's main effort should be to prepare their response plans and protocols for a catastrophic medical emergency and address ongoing surveillance procedures.

The most challenging aspect of coping with a large BW incident will be timing the emergency response to keep pace with the dynamics of casualties and the requirement to quickly institute any required prophylaxis or treatment. There will likely be a small window of opportunity between identification of the medical problem and the advent of peak levels of casualties. Further, any delay in the application of appropriate prophylaxis and/or treatment may cost additional lives in the case of a lethal agent such as anthrax. These considerations drive a response template that is based on expanding and reorienting local medical capabilities to immediately begin coping with the crisis. Communities may not have the personnel resources to provide staff for the numbers of victims requiring medical care. However, with planning, communities can quickly augment those needs. When state, regional, and federal assets arrive, they can immediately supplement the local response and achieve integrated, enhanced medical capabilities.

Recent anthrax attacks have shown that even small BW attacks constitute a local crisis with national implications. The full magnitude and diversity of the required response will necessarily draw from

(and stress) state, regional, and national response assets.

An organized, effective emergency response plan to a large-scale BW attack would also

be applicable to any catastrophic medical emergency. Thus, adaptation of the concepts and components in this guide would enhance the overall local, state, and national emergency preparedness.

APPENDIX A: Military Installation Response

A response to a biological terrorist attack on or near a military installation is likely to be similar to that of a civilian community. This is because most military installations have the same types of response assets that the civilian population would have such as a hospital, a fire department, and a police force. Because a biological terrorist event will never be just an installation problem, military commanders must plan and coordinate their response in conjunction with their neighboring communities. Both the military and civilian communities will have to resolve many of the same issues presented in this planning guide. To assist military commanders prepare their medical treatment facilities (MTFs) to respond to an attack of bioterrorism, the Navy's Bureau of Medicine and Surgery (BUMED) published the Commander's Guidebook: MTF Preparedness and Response to Biological Terrorism. Many of the topics in the guidebook are already addressed in this planning guide and will not be repeated here, as there are many similarities between the response by a military MTF and by a civilian hospital. As with this planning guide, the Commander's Guidebook does not provide definitive answers to every problem that needs to be addressed but rather provides courses of action to consider, a scenario to use in planning, and likely decisions that will need to be made.

The guidebook is written around a fictitious, but realistically plausible scenario. As the scenario unfolds, the guidebook walks the reader through the significant events that will occur and the actions the MTF Commander will have to take. The guidebook lists the following actions that need to be done by the MTF commander at certain times during the first few days

of the response. While some of these are clearly military in nature, most of the actions are still applicable to civilian facilities as well.

- 1 Understand the Federal Response Plan (FRP), Joint Operations Center (JOC), and DoD emergency response units and their impact upon MTF command and control.
- 2 Understand DoD Instruction 3025.1 - Military Support to Civil Authorities (MSCA).
- 3 Contact local and state public health agencies for BW plan coordination efforts.
4. Review the lessons learned from large exercises, such as TOPOFF, for a realistic view of the major implications and issues related to a quarantine order in a large-scale exercise.

EPIDEMIOLOGIC RESPONSE ACTIVITIES

Day 1 Response Activities:

- Case definition (detailed description of disease and pattern).
- Track distribution of cases, persons, place, and time.
- Define population at risk and map initial victim locations.
- Identify source, mode of transmission, and cause.
- Analyze clinical and patient information, diagnosis and prognosis.
- Provide decision support of containment, prevention, and treatment measures.

Incipient Stage:

1. Foster an index of suspicion. Time is of the essence in control and containment of a biological agent release.
2. Practice continuous medical event surveillance.
3. Consider the events you are experiencing against the backdrop of prevailing political tensions, world events, local circumstances, and local threat condition.

Day 1:

1. Prosecute suspicions early. The earlier that epidemiological and laboratory confirmational studies are undertaken, the more useful their results.
2. Immediate notification of the installation commander that confirmational laboratory studies have been ordered. The MTF should notify their next higher medical headquarters.

**MEDICAL
RESPONSE ACTIVITIES**

Day 1 Response Activities:

- Undertake local clinical lab tests.
- Obtain initial diagnosis of illness.
- Consult with laboratory to coordinate specimen packaging and transport.
- Obtain confirmatory diagnosis and identification of BW agent.
- Obtain veterinary diagnosis (if applicable).

Day 2:

1. Preserve mission capability and ensure safety of facility, staff, and patients.
2. Integrate whatever assistance may be forthcoming into unified effort.
3. Control and sequester contagion, implement prophylaxis, if appropriate.
4. Implement MTF media and communications plan with designated single release point for information. Consider use of neutral, non-MTF site for media briefings at pre-announced times. Provide centralized information source for family and friends seeking patient status reports.
5. Request consultation and assistance from military units with specialized BW response team capabilities.

**EMERGENCY MANAGEMENT
RESPONSE ACTIVITIES**

Day 2 Response Activities:

- Activate MTF Emergency Operations Center (EOC).
- Request local, state, federal representation to MTF EOC.
- Implement MTF Emergency Operations Plan (EOP).

Day 3:

1. Provide facility security in conjunction with installation law enforcement at MTF, ER, Ambulatory Care Centers, medical supply depots, prophylaxis distribution sites, morgue, ingress and egress routes for essential personnel, equipment, and residents
2. Implement mass prophylaxis distribution plan.
3. Implement response activities dealing with concerned, but unaffected patients (aka "worried well").

This Commander's Guidebook is available on the internet at <https://bumed.med.navy.mil/med02/bio%20guide%208%20final.doc>. The guidebook also contains a large number of references on BW terrorism that will be helpful to anyone who is beginning to plan and prepare for a large-scale biological terrorism event.

SUPPORT SERVICES RESPONSE ACTIVITIES

Response Activities:

- Implement central coordination of NGOs/volunteer service organizations.
- Conduct next of kin notification.
- Provide families with non-medical, logistics, and transportation assistance.
- Perform crisis, mental health, and grief counseling.
- Provide translation services for non-English speakers.
- Seek State Department liaison if disasters involve OCONUS MTFs/foreign victims.
- Provide individual and family financial assistance, lodging assistance.

PSYCHOLOGICAL RESPONSE ACTIVITIES

Response Activities:

- Minimize panic by clearly communicating risk involved with a BW event.
- Develop informational items describing how MTF plans to protect its patients (e.g. use of media/press flyers, info/fact sheets, etc.).
- Provide BW training and education opportunities for all staff - include frank discussions of potential risks.
- Include mental health participation in BW drills and exercises.
- Consider MOUs/MOAs for mental health services with the local community.

APPENDIX B: Regional Response

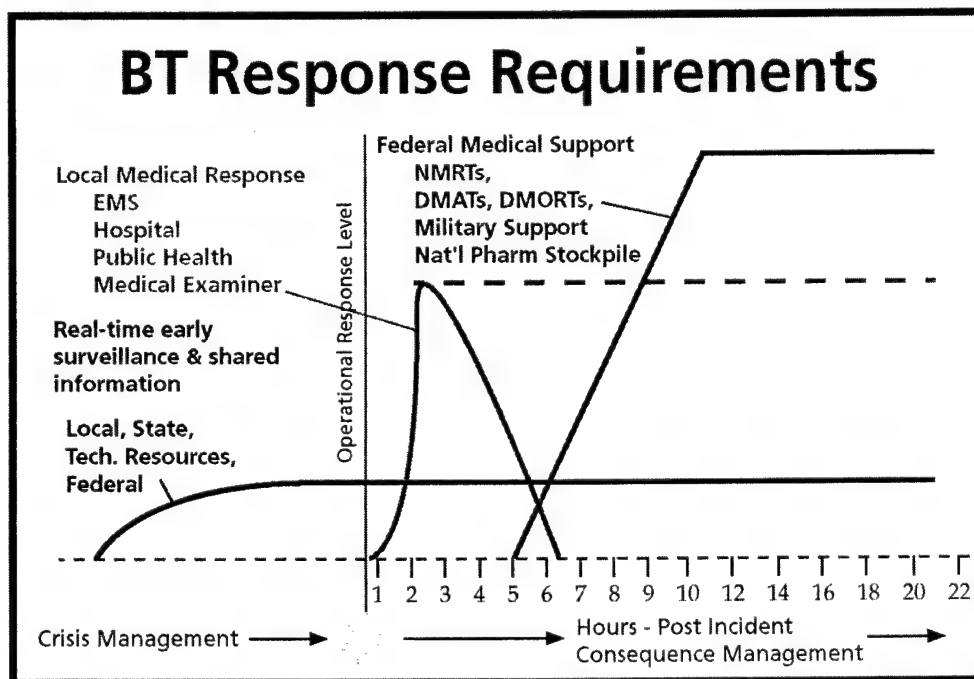
This planning guide was written primarily to aid local municipalities and states prepare for a bioterrorism event. In some locations, such as in New England, it is also helpful to plan for a regional response. In June 2001, a 2-day workshop was held at Dartmouth College with a primary goal to look at the issues associated with the current gap in a regional response. The conference participants were charged with the objective of devising a practical strategy to fill this gap.

The figure below outlines the various response requirements. The dashed line represents the estimated requirement for personnel resources to respond to a biological incident involving 5,000 casualties infected with Tularemia in the town of Hanover, New Hampshire. While available local resources (orange solid line) would respond quickly, they would

fall far short of the need, and they would degrade rapidly from burnout. State and federal resources would begin to reach the scene hours to days later.

Response requirements such as medical personnel and equipment can be accurately estimated, however, only the local community can define integration and control of response resources. Closing the gap between the local response, and the arrival of regional and federal resources is critical to decreasing morbidity and mortality within the affected population.

The severe shortage of resources at any time during the event would essentially preclude an effective response. We should not feel reassured about our response because of the recent anthrax attacks. During these attacks, only a few patients were infected over a prolonged period of time. A well-planned smallpox attack, for



example, would not even be recognized until many patients were already infected, and the disease had spread to several communities. Optimally, the local community would recognize and contain an attack at its earliest stages, while the regional and federal resources would mount a massive and prolonged response. Closing the gap between the local response and the regional and federal response is critical.

In response to this resource problem, the Dartmouth conference produced the "regional response concept" for identifying, obtaining and applying the needed response personnel in the time frame dictated by the course of a biological incident. The concept is predicated on comprehensive local, state, and federal regional planning being completed side by side with appropriate and realistic exercises before the actual attack. During the actual attack, local medical and emergency first response resources would be the first line of defense. Any serious flaw in this first response would seriously jeopardize all of the following responses. The first responders must be able to quickly build the foundation by which outside resources are efficiently integrated and effectively utilized within the community.

The potentially available outside resources utilized for this workshop were broken down into 100, 200 and 300-mile radiuses from the affected community. For example, a radius of 100 miles around Hanover, NH contains sufficient resources to respond to an incident involving 5,000 infected casualties (non-contagious) plus worried well. Many of the responders including doctors and nurses would be volunteers requested by the state governors under a state of emergency to report to the affected community. Not every doctor or nurse in the 100-mile radius could or should respond. If only one in ten responded (10%) there would be sufficient resources for the incident. Other resources from within the 100-mile radius include highly organized personnel like Public Health Disaster Medical Assistant Teams, American Red Cross volunteers, and National Guard units. Their expertise, emergency response pre-training and organization would be utilized to expand the local response into a functioning system into which other volunteers could be incorporated.

For an effective regional response to occur, the community must first identify the resources that it will need and the amount of resources that it can provide. The gap between what is available and what is required will need to be met by outside assets.

LIST OF ACRONYMS

ACC	Acute Care Center
ACLS	Advanced Cardiac Life Support
ATLS	Advanced Trauma Life Support
BW	Biological Weapons
BWIRP	Biological Weapons Improved Response Program
CDC	Centers for Disease Control and Prevention
CDRG	Catastrophic Disaster Response Group
CIA	Central Intelligence Agency-
CMOP	Consolidated Mail Outpatient Pharmacies
CO	Community Outreach
CTS	Community Transportation System
DEST	Domestic Emergency Support Team
DFO	Disaster Field Office
DHHS/OEP	Department of Health and Human Services/Office of Emergency Preparedness
DMAT	Disaster Medical Assistance Team
DMORTS	Disaster Mortuary Operational Teams
DoD	Department of Defense
DOE	Department of Energy
DOJ	Department of Justice
EAS	Emergency Alert System
EMA	Emergency Management Agency
EMS	Emergency Medical Service
EMT	Emergency Medical Technician
EPA	Environmental Protection Agency
EPP	Emergency Preparedness Plans
ERT	Emergency Response Team
ESF	Emergency Support Functions
EST	Emergency Support Team
EOC	Emergency Operations Center
EOP	Emergency Operation Plan
EPA	Environmental Protection Agency
EVOC	Emergency Vehicle Operator Certified
FBI	Federal Bureau of Investigation
FEMA	Federal Emergency Management Agency
FRP	Federal Response Plan
HAZMAT	Hazardous Materials
HEPA	High Efficiency Particulate Air
HHS	Department of Health and Human Services
JIC	Joint Information Center
JOC	Joint Operations Center

LPN	Licensed Practical Nurse
MCC	Medical Command and Control
MEMS	Modular Emergency Medical System
MOA	Memorandum of Agreement
MMRS	Metropolitan Medical Response Systems
NACCHO	National Association of County and City Health Officials
NALS	Neonatal Advanced Life Support
NDMS	National Disaster Medical System
NEHC	Neighborhood Emergency Help Center
NP	Nurse Practitioner
NPS	National Pharmaceutical Stockpile
ODP	Department of Justice, Office for Domestic Preparedness
OSC	On-scene Commander
OVC	Department of Justice, Office for Victims of Crime
PA	Physician's Assistant
PALS	Pediatric Advanced Life Support
PIO	Public Information Officer
ROC	Regional Operations Center
RN	Registered Nurse
RT	Respiratory Therapist
SBCCOM	U.S. Army Soldier and Biological Chemical Command
SCO	State Coordinating Officer
SIOC	Strategic Information Operations Center
SOP	Standard Operating Procedure
USAMRIID	U.S. Army Medical Research Institute of Infectious Disease
USDA	U.S. Department of Agriculture
VA	Veterans Affairs
WMD	Weapons of Mass Destruction

POINTS OF CONTACT FOR PLANNING ASSISTANCE

Department of Justice, Office of Justice Programs, Office for Domestic Preparedness Support: <http://www.ojp.usdoj.gov/osldps>
Helpline (800) 368-6498

- Information for emergency responders on training, equipment, exercises, planning, information sharing, and health/medical services.
- Source of copies of Volume I and II of the 1998 Summary Report on BW Response Template and Response Improvements.

Homeland Defense Web Site: <http://hld.sbcom.army.mil>

- Online source for the 1998 Summary Report on BW Response Template and Response Improvements and other BW IRP pamphlets and reports.
- Building Protection information. See <http://buildingprotection.sbcom.army.mil>
- Information and Fact Sheets on training, exercises and equipment.
- Links to related sites including federal partners of the Domestic Preparedness Program, the Chemical Weapons Improved Response Program, and the Rapid Response Information System.

National Domestic Preparedness Office
<http://www.ndpo.gov>

Department of Health and Human Services
<http://www.dhhs.gov>
(877) 696-6775

Federal Emergency Management Agency
<http://www.fema.gov>
(202) 646-4600

Department of Defense
<http://www.defenselink.mil>
(703) 697-5737

Federal Bureau of Investigation
<http://www.fbi.gov>
(202) 324-3000

Environmental Protection Agency
<http://www.epa.gov>
(202) 260-2090

Department of Energy
<http://www.doe.gov>
(202) 586-5000

Department of Agriculture
<http://www.usda.gov>
(202) 720-2791

Centers for Disease Control
<http://bt.cdc.gov>
<http://www.cdc.gov>
(404) 639-3311

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